

## PSET 4: Traveling Waves

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COURSE: Physics 40B (Spring 2019), Prof. Barsukov

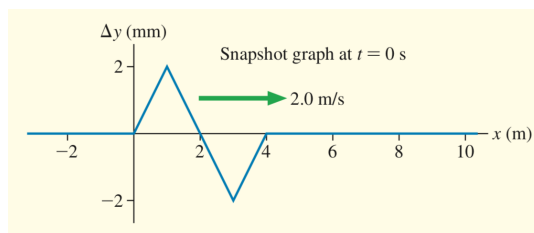
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### 1 The wave model

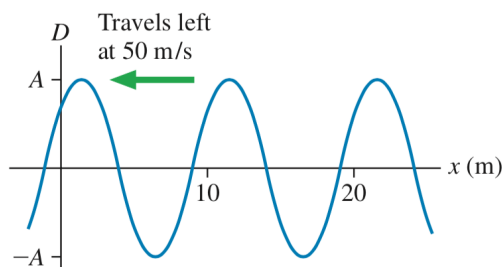
- (a) What is a traveling wave?
- (b) What is the main requirement in order for a traveling wave to propagate?
- (c) Describe the difference between a transverse and a longitudinal wave.
- (d) How do we define a wave's velocity? What does it depend upon?
- (e) Is wavelength of a wave a property of the medium or the source? What about frequency? Explain.

### 2 History and snapshot graphs

- (a) Below is a snapshot graph at  $t = 0$  sec for a wave moving to the right at a speed of 2.0 m/s. Draw a history graph for the position  $x = 8.0$  m.



- (b) What is the frequency of the traveling wave below?



(c) Draw the history graph  $D(x = 0 \text{ m}, t)$  for the wave shown below.

